

Title: IMAGE COMPRESSION
APPARATUS, IMAGE DEPRESSION
APPARATUS AND METHOD THEREOF
Inventor(s): Hirokazu SHODA et al.
Serial No. 09/955,290

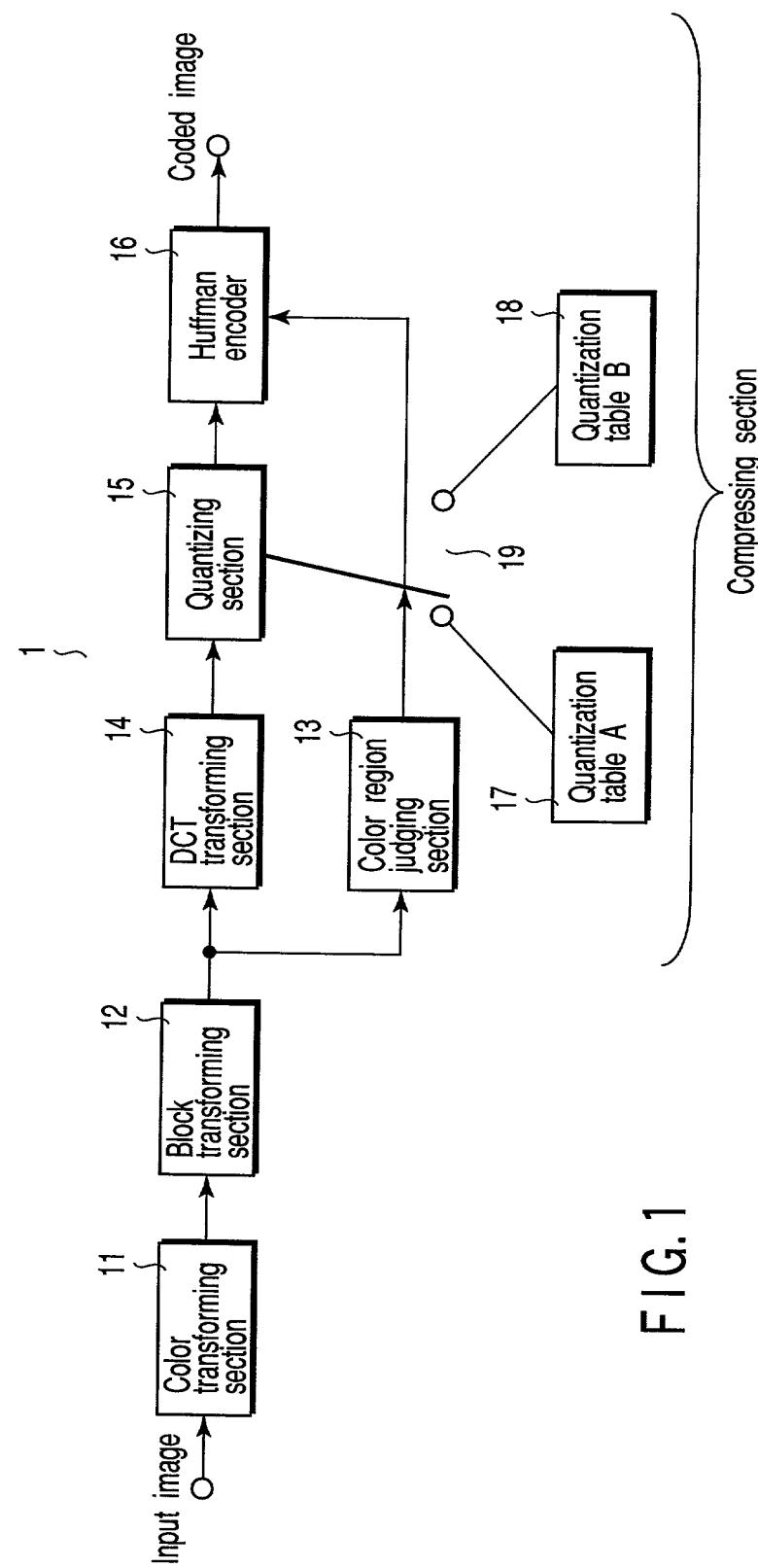


FIG. 1

DCT coefficient

260	49	-16	5	2	4	0	1
-79	36	-2	-7	1	-3	-1	-2
0	-8	3	-2	-2	1	5	1
-8	-4	5	1	1	7	6	-2
-2	-6	-1	-4	-4	-1	0	-1
-3	-2	-1	1	1	2	-5	-1
-4	1	1	0	0	-2	2	0
1	1	1	1	-1	1	0	0

(a)

16	4	2	0	0	0	0	0
-7	3	0	0	0	0	0	0
0	-1	0	0	0	0	0	0
-1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

(c)

Quantization table

16	11	10	16	24	40	51	61
12	12	14	19	26	58	60	55
14	13	16	24	40	57	69	56
14	17	22	29	51	87	80	62
18	22	37	56	68	109	103	77
24	35	55	64	81	104	113	92
49	64	78	87	103	121	120	101
72	92	95	98	112	100	103	99

(b)

FIG. 2

Grouping of finite differences of DC coefficient

Group No.	DC finite differences	Added bit
0	0	0
1	-1, 1	1
2	-3, -2, 2, 3	2
3	-7~ -4, 4~7	3
4	-15~ -8, 8~15	4
5	-31~ -16, 16~31	5
6	-63~ -32, 32~63	6
7	-127~ -64, 64~127	7
8	-255~ -128, 128~255	8
9	-511~ -256, 256~511	9
10	-1023~ -512, 512~1023	10
11	-2047~ -1024, 1024~2047	11
12	-4095~ -2048, 2048~4095	12
13	-8191~ -4096, 4096~8191	13
14	-16383~ -8192, 8192~16383	14
15	-32767~ -16384, 16384~32767	15

FIG. 3A

Coding table for Group No.

Group No.	Code length	Coded word
0	2	00
1	3	010
2	3	011
3	3	100
4	3	101
5	3	110
6	4	1110
7	5	11110
8	6	111110
9	7	1111110
10	8	11111110
11	9	111111110
12	10	1111111110
13	11	11111111110
14	12	111111111110
15	13	1111111111110

FIG. 3B

Grouping of finite differences of AC coefficient

Group No.	DC finite differences	Added bit
0	0	0
1	-1, 1	1
2	-3, -2, 2, 3	2
3	-7~ -4, 4~7	3
4	-15~ -8, 8~15	4
5	-31~ -16, 16~31	5
6	-63~ -32, 32~63	6
7	-127~ -64, 64~127	7
8	-255~ -128, 128~255	8
9	-511~ -256, 256~511	9
10	-1023~ -512, 512~1023	10
11	-2047~ -1024, 1024~2047	11
12	-4095~ -2048, 2048~4095	12
13	-8191~ -4096, 4096~8191	13
14	-16383~ -8192, 8192~16383	14
15	-32767~ -16384, 16384~32767	15
16	32753	0

FIG. 3C

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Color region information	Group No.					
	0	1	2	-----	14	15
	0	0000	00010	00011	-----	-----
	1	0100	01010	01011		
	2	1000				
	3					
	4					
	5					
	6					
7						
8						

FIG. 4

Run-length	Group No.					
	0	1	2	-----	14	15
	0	EOB				
	1					
	2					
	3					
	4					
	5					
	6					
7						
8						
9						
10						
11						
12						
13						
14						
15		ZRL				

FIG. 5

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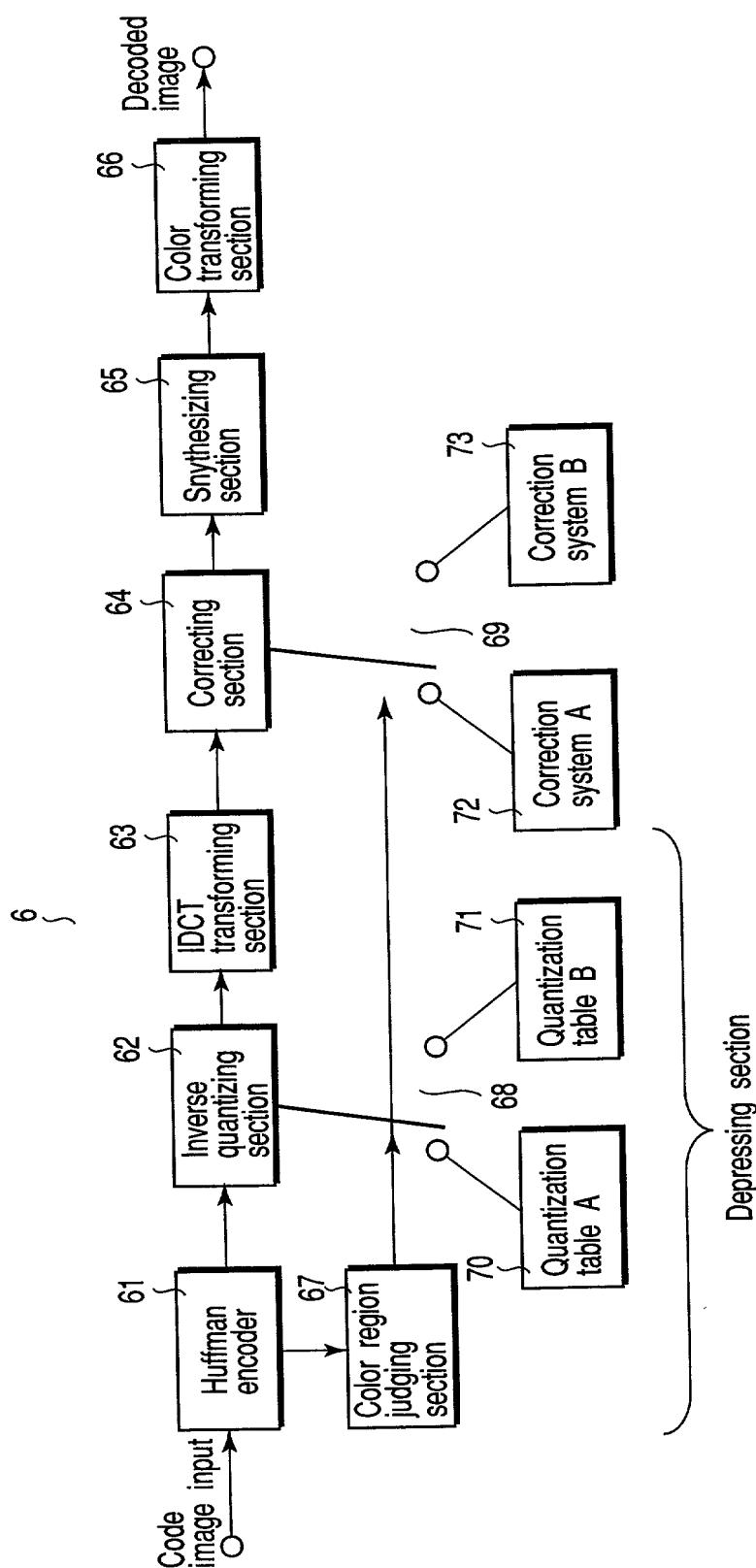


FIG. 6

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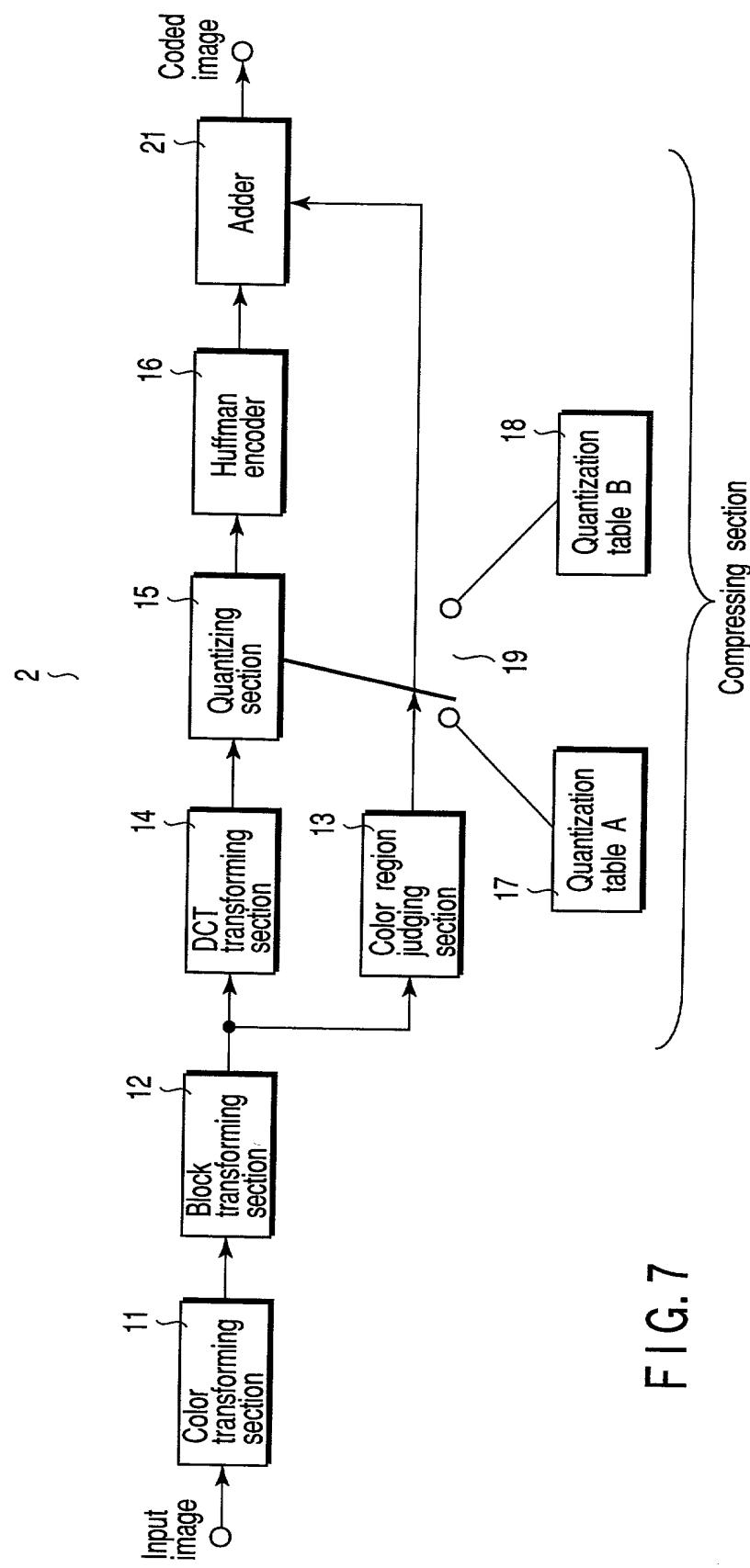


FIG. 7

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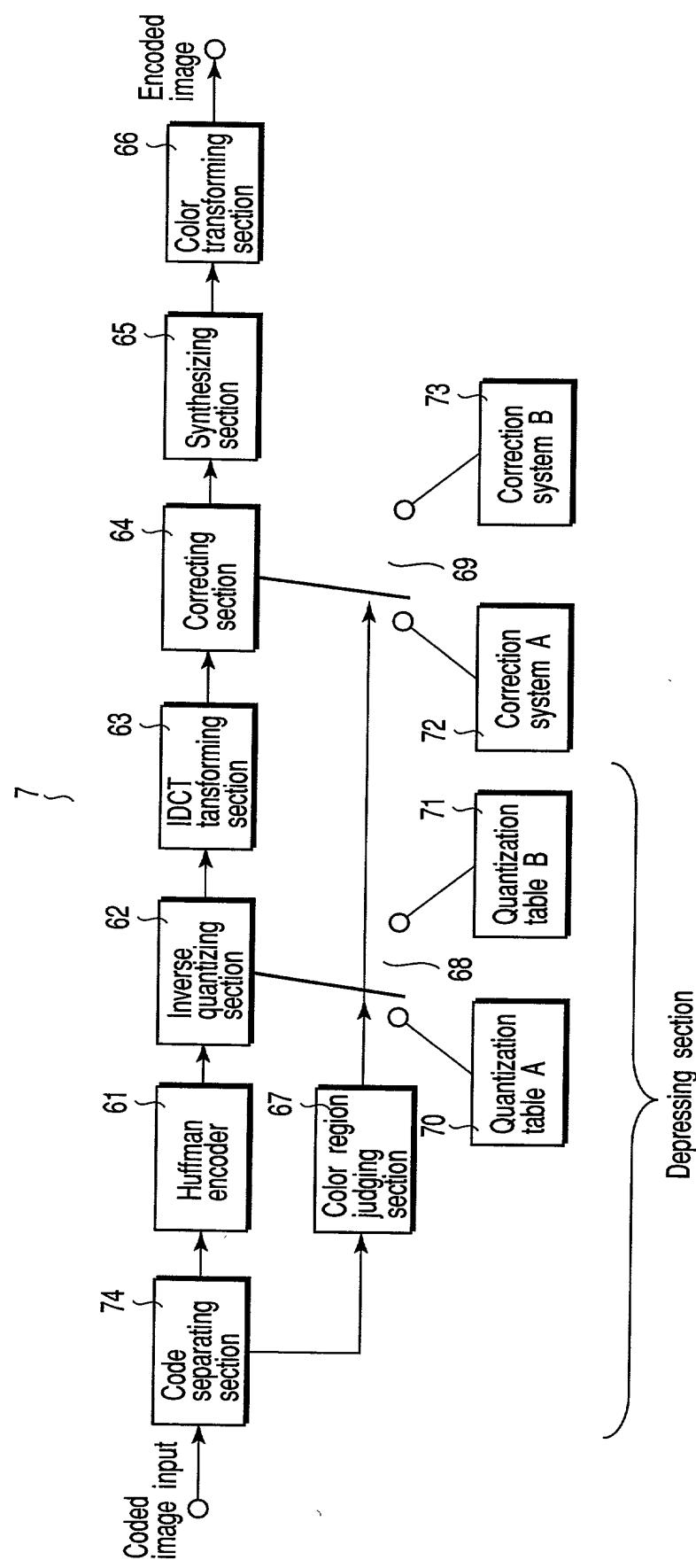


FIG. 8

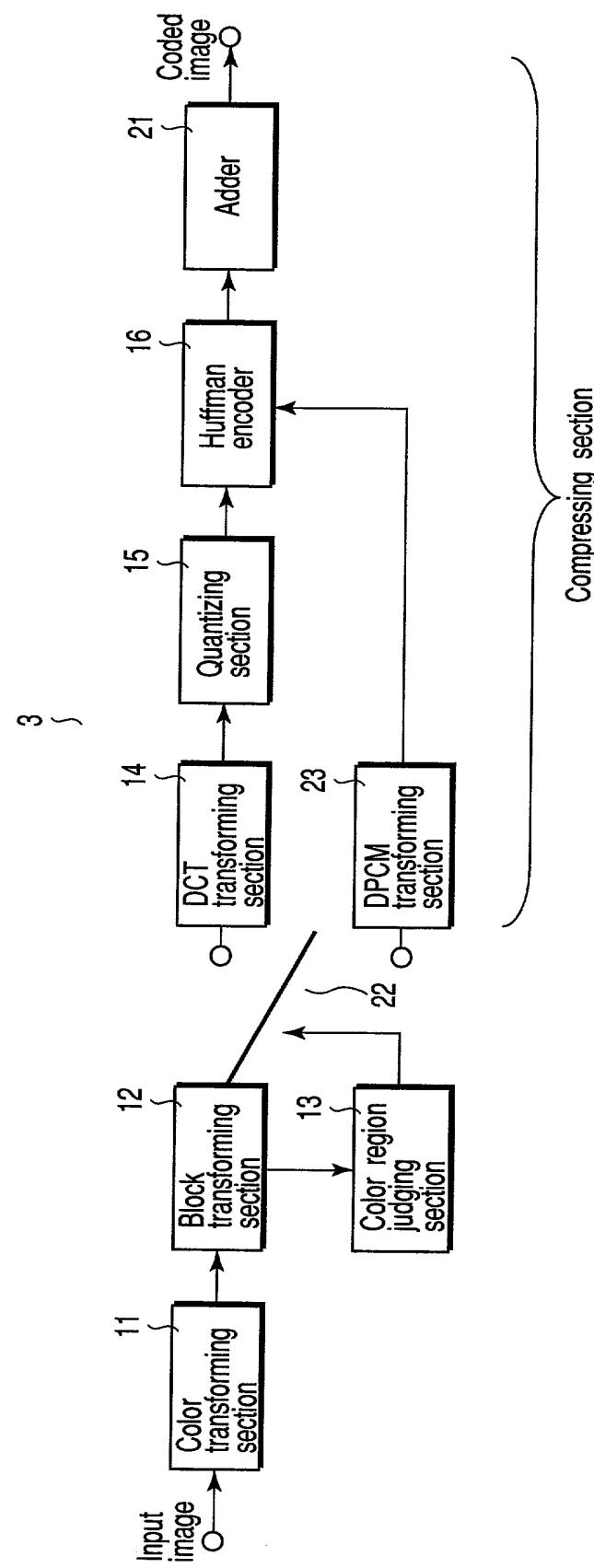


FIG. 9

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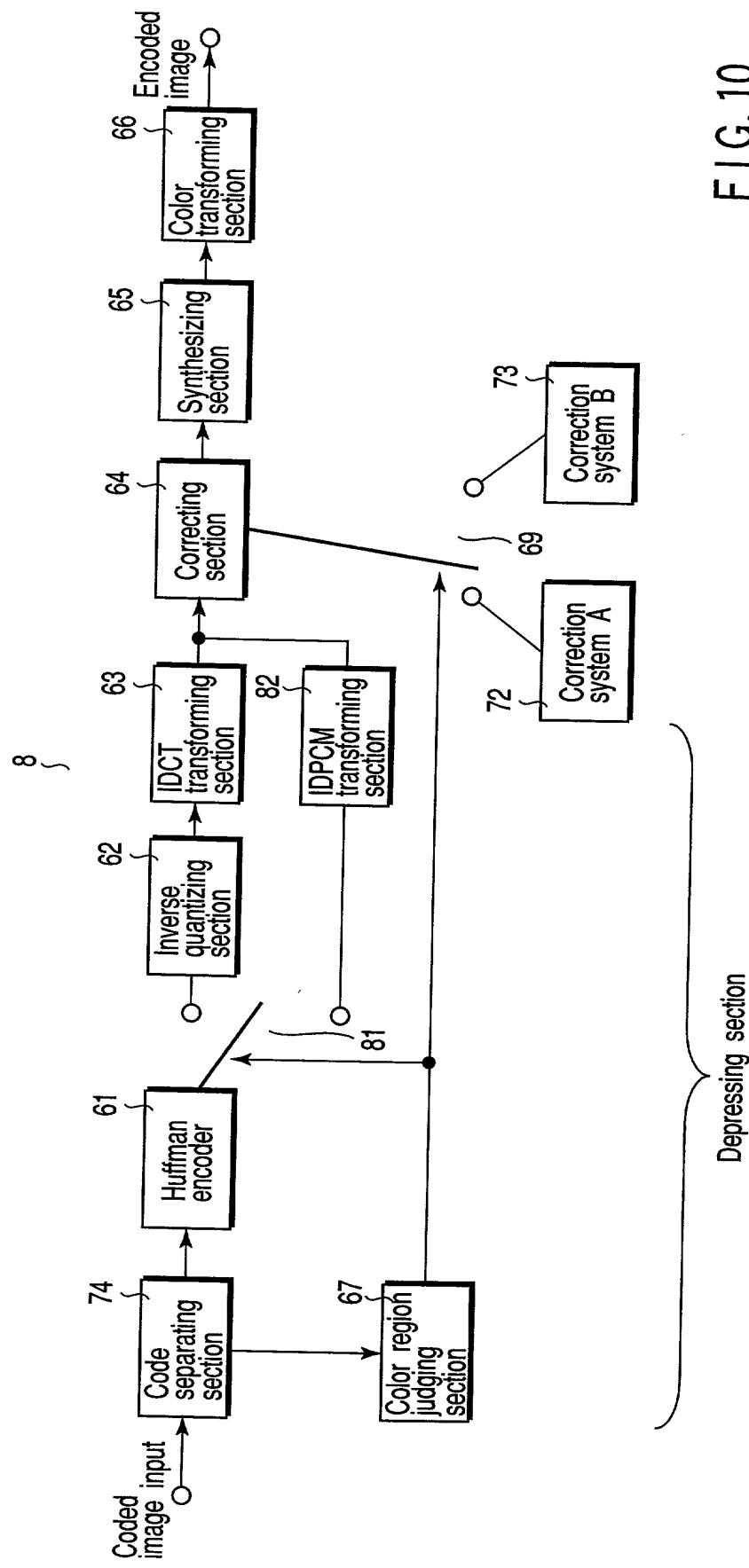


FIG. 10

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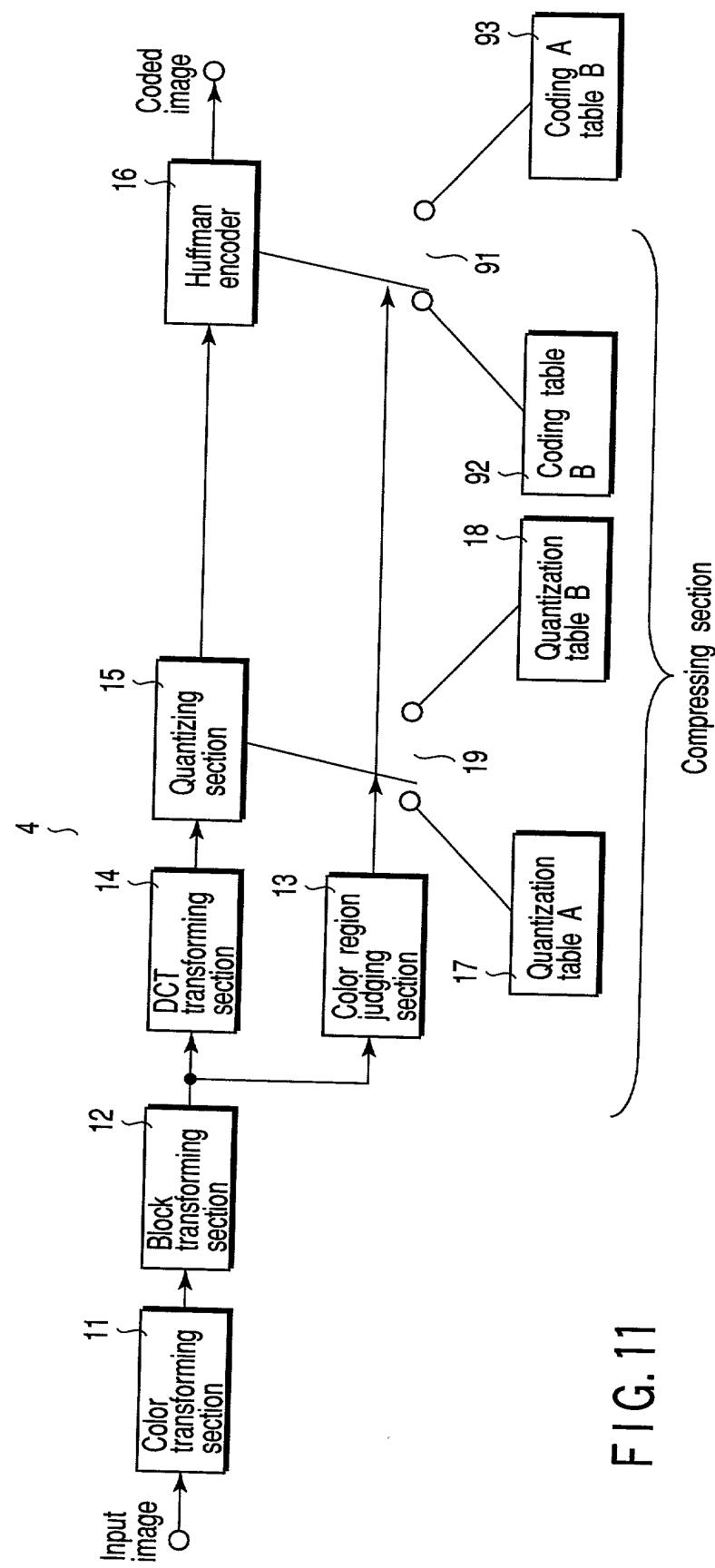
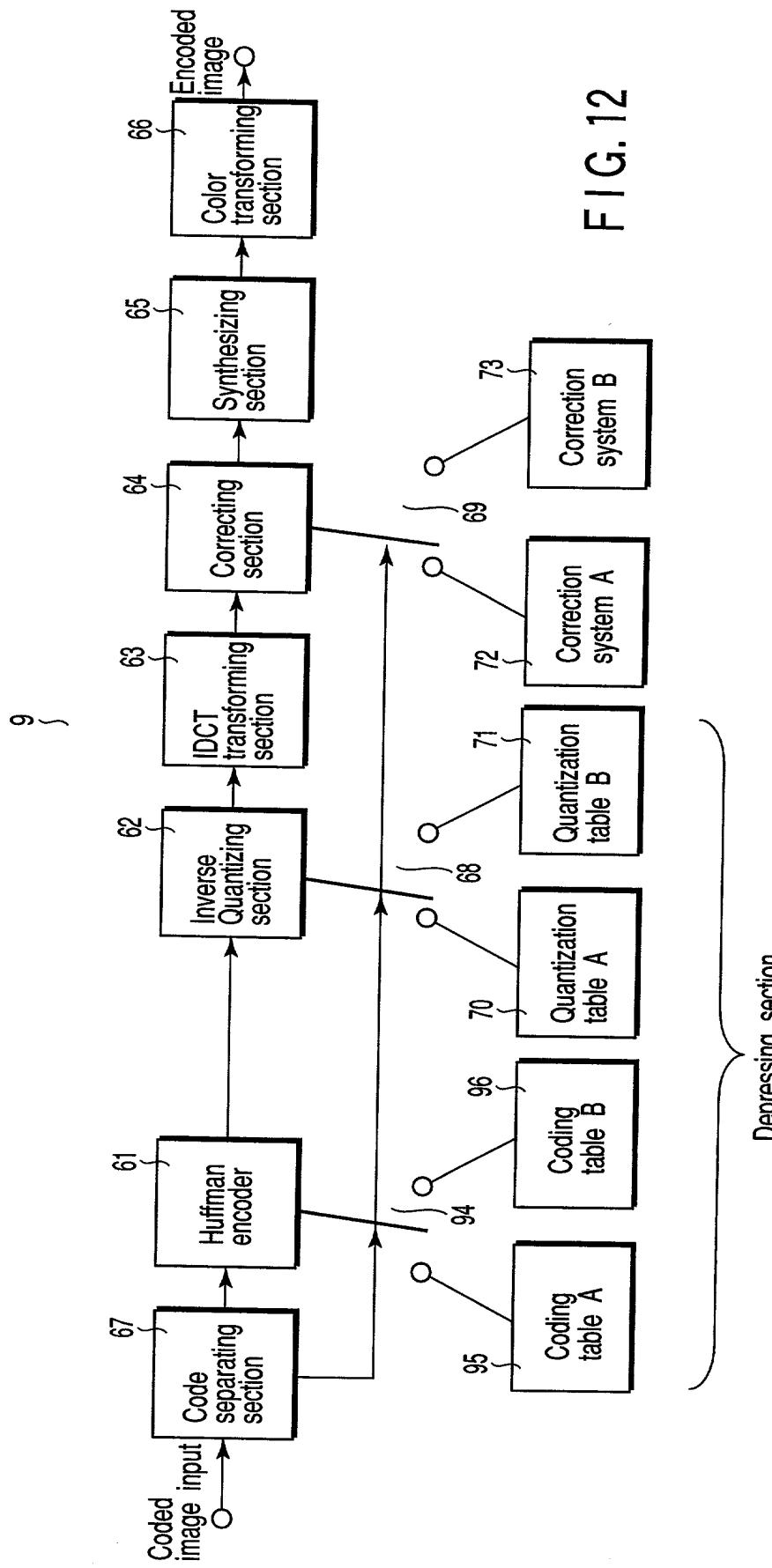


FIG. 11

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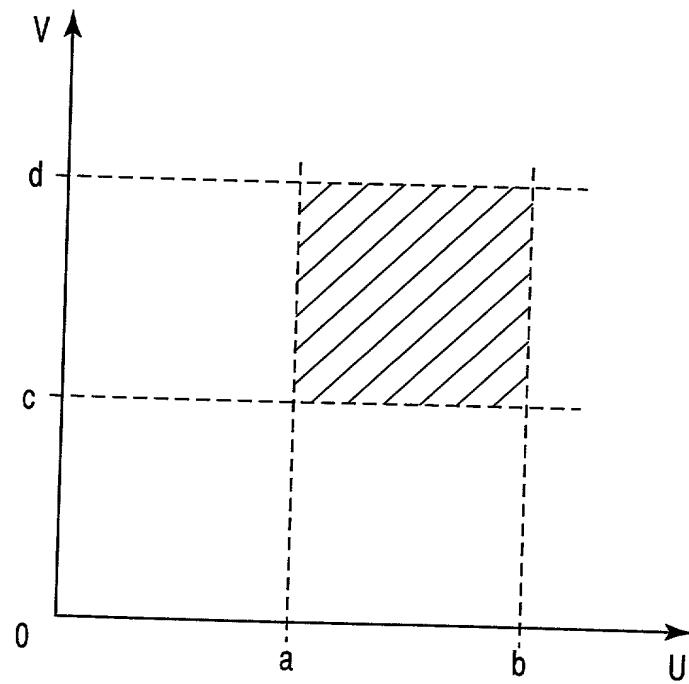


FIG. 13